

trimming of an aluminum sheet. The aluminum sheet shown in Fig. 4 is not orientated at a cutting angle as presently claimed. Applicant has found that in the absence of the presently claimed cutting angle, unwanted slivers tend to form at the blade contact zone, with minor amounts of slivers occurring at the burr area or fracture surface, all as shown in Fig. 4. Fig. 4 is described in detail at page 5, lines 29-31 of the specification as originally filed. The present amendment of the paragraph at page 3 of the specification conforms with the original detailed description at page 5 of the specification. Accordingly, no issue of new matter is presented.

Independent Claims 1 and 10 have been amended to more clearly recite a cutting blade clearance of at least about 5 percent of the thickness of the aluminum sheet. Basis for this recitation is provided in the application, for example, at page 6, line 28, Tables 1-7, and Claim 2 as originally filed. Amended Claims 1 and 10 more clearly recite the aluminum trimming parameters which produce unexpectedly improved results of the present invention, namely, that the quality of trimmed aluminum sheet can be significantly increased by controlling the cutting angle and cutting blade clearance within the recited ranges.

Claims 1, 10-12 and 17 stand rejected under 35 U.S.C. § 103(a) over Kravets '263. According to the Office Action, the Kravets '263 patent discloses a cutting device which performs every step of the claimed method, except for the metal sheet being aluminum.

As disclosed throughout Applicants' specification, and graphically illustrated in Fig. 9, aluminum sheet must be trimmed at controlled cutting angles in accordance with the present invention in order to produce high quality trimmed aluminum sheet. Applicant submits that Kravets '263 fails to teach or suggest the use of a cutting angle of from about 10 to about 30 degrees.

Moreover, by the present Amendment, independent Claims 1 and 10 have been amended to recite a cutting blade clearance of at least about 5 percent of the thickness of the aluminum sheet. Such a clearance is not taught or suggested by Kravets '263.

Furthermore, the combined use of a cutting angle of from about 10 to about 30 degrees and a cutting blade clearance of at least about 5 percent for trimming aluminum sheet, as recited in Claims 1 and 10, is not taught or suggested by Kravets '263. In addition, Kravets '263 fails to recognize the unexpectedly improved results achieved in accordance with the presently claimed invention. Nowhere does the reference suggest Applicants' unexpectedly improved trimmed aluminum sheet quality which is achieved by keeping the cutting angle within a range

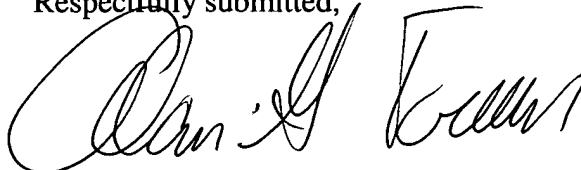
of from about 10 to about 30 degrees and maintaining a cutting blade clearance of at least 5 percent.

It is therefore submitted that amended Claims 1 and 10, and the claims that depend therefrom, are patentable over Kravets '263.

In view of the foregoing amendments and remarks, it is submitted that Claims 1-5, 10 and 12-17 are patentable over the prior art of record. Accordingly, an early notice of allowance of this application is respectfully requested.

In the event that any outstanding matters remain in connection with this application, the Examiner is invited to telephone the undersigned at (412) 263-4340 to discuss such matters.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Alan G. Towner", written in a cursive style.

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Marked-up Version of Specification and Claims

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Specification:

Page 3, lines 9 and 10:

Fig. 4 is a partially schematic illustration of [an aluminum sheet being trimmed in accordance with an embodiment of the present invention] sliver generation during trimming of an aluminum sheet.

Claims:

1. ^{Four times}
(~~Thrice~~ amended) A method of trimming aluminum sheet comprising:

securing the aluminum sheet in a die adjacent a cutting blade at a cutting angle of from about 10 to about 30 degrees measured from a plane perpendicular to a cutting direction of the cutting blade and with a cutting blade clearance of at least 5 percent of the thickness of the aluminum sheet measured between the blade and the die; and

trimming the aluminum sheet at the cutting angle and with the cutting blade clearance to thereby produce a trimmed aluminum sheet with substantially no slivers.

10. (~~Thrice~~ amended) A method of trimming an aluminum sheet comprising:

securing the aluminum sheet between a die and a pad at a cutting angle of from about 10 to about 30 degrees adjacent a cutting blade wherein the cutting angle is measured from a plane perpendicular to a cutting direction of the cutting blade, and with a cutting blade clearance of at least about 5 percent of the thickness of the aluminum sheet measured between the blade and the die; and

trimming the aluminum sheet at the cutting angle and with the cutting blade clearance to thereby produce a trimmed aluminum sheet with substantially no slivers.

12. (Twice amended) The method of Claim [11] 10, wherein the [securing step comprising securing the aluminum sheet at a] cutting angle [of] is from about 15 to about 25 degrees.

13. (Amended) The method of Claim [12] 10, [further comprising providing a clearance between the cutting blade and the die of] wherein the clearance is at least about 10 percent of the thickness of the aluminum sheet.